STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF MANAGEMENT AND BUDGET
STATE PLANNING COORDINATION

March 15, 2006

Mr. Gary Cuppels
ECI, Inc.
220 Rehoboth Avenue
P.O. Box 820
Rehoboth Beach, De 19971

RE: PLUS review – PLUS 2006-02-05; Shipbuilders Square at Georgetown

Dear Mr. Cuppels:

Thank you for meeting with State agency planners on February 22, 2006 to discuss the proposed plans for the Shipbuilders Square at Georgetown project to be located at 21576 Vaughn Road near Georgetown.

According to the information received, you are seeking annexation of 51 acres into the Town of Georgetown with rezoning from AR-1 to MR-1 for a 267 unit single family residential subdivision.

Please note that changes to the plan, other than those suggested in this letter, could result in additional comments from the State. Additionally, these comments reflect only issues that are the responsibility of the agencies represented at the meeting. The developers will also need to comply with any Federal, State and local regulations regarding this property. We also note that as The Town of Georgetown will be the governing authority over this land once it is annexed, the developers will need to comply with any and all regulations/restrictions set forth by the Town.

Executive Summary

The following section includes some site specific highlights from the agency comments found in this letter. This summary is provided for your convenience and reference. The

full text of this letter represents the official state response to this project. ***Our office notes that the applicants are responsible for reading and responding to this letter and all comments contained within it in their entirety.***

State Strategies/Project Location

- This is located in Investment Levels 2 and 3 according to the *Strategies for State Policies and Spending* and has been proposed for annexation into the Town of Georgetown. In these areas, State policies support development that is consistent with the local comprehensive plan.

Street Design and Transportation

- DelDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 30 feet from the centerline on local roads. Therefore they will require right-of-way dedication along the frontage to provide any additional width needed from this project.

- DelDOT will also require that a paved multi-modal path, located in a 15-foot wide permanent easement, be provided across the frontage of the site.

- DelDOT recommends that sidewalks be provided on both sides of the internal streets for pedestrian safety.

- The plan provided for the subject land includes two dead-end streets that could be either turnarounds or stub streets to the property immediately north of it. That property, at various times, has been proposed for development as townhouses or apartments. If connections to that property are possible, DelDOT recommends that the dead-end streets be extended north to the property line as stub streets and that easements be provided to the adjoining property. If there is a current plan for that property, the streets should be moved as necessary to coordinate with it.

- The extensive use of head-in perpendicular parking is undesirable for safety reasons in that drivers backing out in smaller vehicles cannot readily see or be seen by drivers passing through. This situation is less of a problem where speeds are low, but the plan presented shows several long straight stretches where drivers will travel faster if traffic calming is not provided. A similar concern exists at the site entrances, where entering vehicles may not have slowed down yet.

  Additionally, where blocks of spaces face each other on opposite sides of the street, head-in perpendicular parking requires exiting drivers to be particularly

aware of each other, as well as of traffic on the through street. Collisions between vehicles making parking maneuvers are generally minor, but with head-in perpendicular parking they are more likely to happen.

At the PLUS meeting, the developer's engineer stated that the parking layout was similar to what is typically found in parking lots of apartment complexes. We agree but find that the proposed development is different in that streets are different from parking lot aisles. In parking lots, drivers are more likely to be moving slowly and watching for backing vehicles. If the proposed layout cannot be changed, traffic calming, and possibly advisory signing, should be required.

Natural and Cultural Resources

- The DHCA would like the opportunity to document the Vaughn House and any historic outbuildings remaining before any demolition activities take place. They would also like the opportunity to look for archaeological sites and learn something about their location, size, and nature prior to any ground-disturbing activities.

- It should also be noted that most of the soils (at least 75%) on this parcel are likely to have a seasonal high water table within a depth of one-foot from the soil surface. Building in such soils may leave prospective residents of this and adjoining properties susceptible to future flooding problems from groundwater-driven surface water ponding. Therefore, the applicant should refrain from building on lots containing mapped hydric soils or soils delineated as such by their consulting soil scientist, and reduce the amount of created surface imperviousness to the greatest extent possible.

- Because there is strong evidence that federally regulated wetlands exist on site, a <u>field</u> wetland delineation, in accordance with the methodology established by the Corps of Engineers Wetlands Delineation Manual, (Technical Report Y-87-1) should be conducted. Once complete, this delineation should be verified Corps of Engineers through the Jurisdictional Determination process. A State of Delaware Subaqueous Lands Jurisdictional Determination should also be conducted.

- Based on a preliminary evaluation of this project using this model (using the applicant's assumptions and some of our own assumptions in lieu of missing information), this project **<u>does not</u>** meet the TMDL reduction requirements for Nitrogen and Phosphorous. The applicant should be made aware that the accurate assessment of a project's true environmental impacts is highly dependent on an

accurate accounting and inventory of all its land uses, natural resources and their proposed management. Since it was apparent that some of this information was omitted, incomplete or inaccurate, it is more than likely that aforementioned nutrient budget calculation (via the nutrient budget protocol) actually understates this project's environmental impacts. It is the applicant's responsibility to provide accurate and complete information so that a realistic environmental assessment can be made.

DNREC suggests that the applicant verify their project's compliance (after correcting all our concerns and/or using realistic assumptions) with the specified TMDL loading rates by running the model themselves. DNREC strongly recommends that the applicant consider the use of the aforementioned BMPs to help ensure compliance with the required TMDLs. Please contact Lyle Jones or John Martin of Watershed Section at 739-9939 for the acceptable model protocol.

- This site contains the Layton-Vaughn Tax Ditch, and the plan submitted is proposing to place roads, parking lots, a pump station, sidewalks, and housing units within the Layton Vaughn Tax Ditch right-of-way. Contact the Drainage Program at (302) 856-5488 to determine the tax ditch rights-of-way and the managers of the tax ditch

- This site contains a large area of forested wetlands, a type of habitat that supports an array of plant and animal species. DNREC highly recommends that Phase III and Phase IV of this development be eliminated to protect this important forest resource as this type of habitat has been impacted by development statewide.

The following are a complete list of comments received by State agencies:

Office of State Planning Coordination – Contact: Dorothy Morris 855-7878

This is located in Investment Levels 2 and 3 according to the *Strategies for State Policies and Spending* and has been proposed for annexation into the Town of Georgetown. In these areas, State policies support development that is consistent with the local comprehensive plan.

The design should be improved in keeping with the principles put forward in *Better Models for Development in Delaware*.

Division of Historic and Cultural Affairs – Contact: Alice Guerrant 739-5685

There is a historic agricultural complex, the Mrs. H. Vaughn House (S-3196; Beers Atlas of 1868) on this parcel. There are areas of good potential for prehistoric-period archaeological sites as well.

Small, rural, family cemeteries often are found in relation to historic farm complexes, such as the Vaughn House, usually a good distance behind or to the side of the house. The developer should be aware of Delaware's Unmarked Human Remains Act of 1987, which governs the discovery and disposition of such remains. The unexpected discovery of unmarked human remains during construction can result in significant delays while the process is carried out. We will be happy to discuss these issues with the developer; the contact person for this program is Faye Stocum, 302-736-7400.

The DHCA would like the opportunity to document the Vaughn House and any historic outbuildings remaining before any demolition activities take place. They would also like the opportunity to look for archaeological sites and learn something about their location, size, and nature prior to any ground-disturbing activities.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

1) In July 2004, when the developer's site engineer first contacted us, this project was proposed as 385 townhouses. At that size, the proposed development would have generated about 2,020 trips per day, approaching, although not exceeding our warrant of 2,100 trips per day for a traffic impact study (TIS). While DelDOT records do not say so specifically, they believe the decision to require a TIS was reached in consultation with the Town's Planning Director, Ms. Debbie Pfeil. At that time they set a scope of work for a TIS and then heard nothing about the project until July 2005, when the developer's traffic engineer contacted them to begin work on the study.

   Presently the study is in progress, and if work on it continues DelDOT would expect to receive it and review it later this year. Due to the reduced size of the development, however, they must point out that the development now proposed would generate about 1,480 trips per day, well below the warrant of 2,100 trips per day. While DelDOT is willing to continue the TIS process, if the developer or the Town finds that appropriate, they must point out that the project would not meet the current warrants for requiring a TIS and that without a request from the Town we presently cannot require one for this project.

As the developer may be aware, DelDOT is preparing to advertise and register new standards and regulations for entrances and subdivision streets, with a goal of adopting them in mid-April. If those regulations are adopted as drafted, they would require a TIS for this project, but absent a requirement for a TIS from the Town, the developer would have the option of instead paying a fee that would be applied toward an area wide traffic study.

2) Vaughn Road is classified as a local road. Local roads in Delaware typically have right-of-way widths ranging from 33 to 50 feet. DelDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 30 feet from the centerline on local roads. Therefore they will require right-of-way dedication along the frontage to provide any additional width needed from this project.

3) DelDOT will also require that a paved multi-modal path, located in a 15-foot wide permanent easement, be provided across the frontage of the site.

4) DelDOT recommends that sidewalks be provided on both sides of the internal streets for pedestrian safety.

5) The plan provided for the subject land includes two dead-end streets that could be either turnarounds or stub streets to the property immediately north of it. That property, at various times, has been proposed for development as townhouses or apartments. If connections to that property are possible, DelDOT recommends that the dead-end streets be extended north to the property line as stub streets and that easements be provided to the adjoining property. If there is a current plan for that property, the streets should be moved as necessary to coordinate with it.

6) In addition to the two locations just mentioned, there is one location in Phase II, and three locations in Phase IV, where vehicles could not properly turn around using the turnarounds shown. They recommend that usable turnarounds be provided. This is particularly true if the adjoining parking spaces are occupied.

7) There are two locations in Phase I and one location in Phase IV where townhouse blocks are proposed on the outsides of sharp curves. In such locations, parking maneuvers would conflict with through traffic.

8) The extensive use of head-in perpendicular parking is undesirable for safety reasons in that drivers backing out in smaller vehicles cannot readily see or be seen by drivers passing through. This situation is less of a problem where speeds are low, but the plan presented shows several long straight stretches where drivers

will travel faster if traffic calming is not provided. A similar concern exists at the site entrances, where entering vehicles may not have slowed down yet.

9) Additionally, where blocks of spaces face each other on opposite sides of the street, head-in perpendicular parking requires exiting drivers to be particularly aware of each other, as well as of traffic on the through street. Collisions between vehicles making parking maneuvers are generally minor, but with head-in perpendicular parking they are more likely to happen.

10) At the PLUS meeting, the developer's engineer stated that the parking layout was similar to what is typically found in parking lots of apartment complexes. We agree but find that the proposed development is different in that streets are different from parking lot aisles. In parking lots, drivers are more likely to be moving slowly and watching for backing vehicles. If the proposed layout cannot be changed, traffic calming, and possibly advisory signing, should be required.

11) The developer's site engineer should contact Mr. John Fiori, DelDOT Subdivision Manager for Sussex County, regarding their specific requirements for access. He may be reached at (302) 760-2260.

The Department of Natural Resources and Environmental Control – Contact: Kevin Coyle 739-9071

Soils

According to the Sussex County soil survey Evesboro, Woodstown and Johnston were mapped in the immediate vicinity of the proposed construction. Evesboro is an excessively well-drained upland soil that has limitations associated with rapid permeability. Woodstown is a moderately well-drained soil of low-lying uplands that has moderate limitations for development. Johnston is a very poorly-drained wetland associated (hydric) floodplain soil that has the highest severity level for development.

It should also be noted that most of the soils (at least 75%) on this parcel are likely to have a seasonal high water table within a depth of one-foot from the soil surface. Building in such soils may leave prospective residents of this and adjoining properties susceptible to future flooding problems from groundwater-driven surface water ponding. This issue is of particular concern during periods of high-intensity long duration rainfall events associated with tropical storms/hurricanes or "nor'easters." Flooding probabilities may be further augmented by surface water runoff emanating from created forms of structural imperviousness (roof tops, roads, and sidewalks). Therefore, the applicant should refrain from building on lots containing mapped hydric soils or soils delineated as

such by their consulting soil scientist, and reduce the amount of created surface imperviousness to the greatest extent possible.

Wetlands

Statewide Wetland Mapping Project (SWMP) maps indicate the presence of palustrine wetlands on this parcel.

These wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. A 100-foot vegetated buffer should be implemented from the edge of the wetland complex. The developer should note that both DNREC and Army Corps of Engineers discourage allowing lot lines to contain wetlands to minimize potential cumulative impacts resulting from unauthorized and/or illegal activities and disturbances that can be caused by homeowners.

Because there is strong evidence that federally regulated wetlands exist on site, a field wetland delineation, in accordance with the methodology established by the Corps of Engineers Wetlands Delineation Manual, (Technical Report Y-87-1) should be conducted. Once complete, this delineation should be verified Corps of Engineers through the Jurisdictional Determination process. A State of Delaware Subaqueous Lands Jurisdictional Determination should also be conducted. Contact the DNREC Wetlands and Subaqueous Lands Section at (302) 739-9943.

If impacts are anticipated, please note that Palustrine wetlands are regulated by the Army Corps of Engineers through Section 404 of the Clean Water Act. In situations where the applicant believes that the delineated wetlands on their parcel are nonjurisdictional isolated wetlands, the Corps must be contacted to make the final jurisdictional assessment. They can be reached by phone at 736-9763.

In addition, individual 404 permits and certain Nationwide Permits from the Army Corps of Engineers also require 401 Water Quality Certification from the Wetlands and Subaqueous Lands Section and Coastal Zone Federal Consistency Certification from the DNREC Division of Soil and Water Conservation, Delaware Coastal Programs Section. Each of these certifications represents a separate permitting process.

To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-9943 to schedule a meeting.

Impervious Cover

Research has consistently shown that once a watershed exceeds a threshold of 10 percent imperviousness, water and habitat quality irreversibly decline. Based on analyses of 2002 aerial photography by the University of Delaware, the Deep Creek watershed, at that time, had about 5.7 percent impervious cover. Although this data is about 4 years old and likely an underestimate, it illustrates the importance of a proactive strategy to mitigate for predictable and likely cumulative environmental impacts. Since the amount of imperviousness generated by this project will be much higher than the desirable watershed threshold of 10 percent, the applicant is strongly advised to pursue best management practices (BMPs) that mitigate or reduce some of the most likely adverse impacts. Using pervious paving materials ("pervious pavers") in lieu of asphalt or concrete in conjunction with an increase in forest cover preservation or additional tree plantings are examples of practical BMPs that could easily be implemented to reduce surface imperviousness.

Based on a review of the submitted PLUS application, the applicant projects that only about 24% of this parcel will be rendered impervious following this parcel's development; however, this figure appears to be a significant underestimate given the scope and density of this project. The applicant should be made aware that all forms of constructed surface imperviousness (i.e., rooftops, sidewalks and roads) should be included in the impervious surface calculation; otherwise, an inaccurate assessment of this project's actual environmental impacts will result. It is strongly recommended that this figure be recalculated in a manner that more accurately account all forms of constructed imperviousness.

ERES Waters

This project is located adjacent to receiving waters of the Chesapeake Bay designated as waters having Exceptional Recreational or Ecological Significance (ERES). ERES waters are recognized as special assets of the State, and shall be protected and/ or restored, to the maximum extent practicable, to their natural condition. Provisions in Section 5.6 of Delaware's "Surface Water Quality Standards" (as amended July 11, 2004), specify that all designated ERES waters and receiving tributaries develop a "pollution control strategy" to reduce non-point sources of pollutants through implementation of Best Management Practices (BMPs). Best Management Practices as defined in subsection 5.6.3.5 of this section, expressly authorizes the Department to provide standards for controlling the addition of pollutants and reducing them to the greatest degree achievable and, where practicable, implementation of a standard requiring no discharge of pollutants.

TMDLs

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Deep Creek. A TMDL is the maximum level of pollution allowed for a given pollutant below which a "water quality limited waterbody" can assimilate and still meet water quality standards to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. In the Broad Creek watershed, "target-rate-reductions" of 30 and 50 percent will be required for nitrogen and phosphorus, respectively.

Compliance with TMDLs through the PCS

In the Deep Creek watershed, the primary source of water quality impairment is associated with nutrient runoff from agricultural and/or residential development. In order to mitigate for the aforementioned impairments, a post-development TMDL reduction level of 30 and 50 percent will be required for nitrogen and phosphorus, respectively. Compliance with the post-development TMDL nutrient loading reduction requirements will be assessed via nutrient budget protocol, a computer-based model that quantifies post-development nutrient loading under a variety of land use scenarios in combination with a variety (or absence) of BMP types and intensities. This post-development loading rate is then compared with the pre-development loading rate as a means to assess whether the project meets the acceptable TMDL reduction levels. Based on a preliminary evaluation of this project using this model (using the applicant's assumptions and some of our own assumptions in lieu of missing information), this project **does not** meet the TMDL reduction requirements for Nitrogen and Phosphorous. The applicant is strongly advised the applicant is strongly advised to consider the use of appropriate BMPs and Best Available Technologies (BATS) to ensure compliance. Examples of BMPs or BATs that should be used to significantly reduce nutrient loading from this project include practices that prevent or mitigate surface imperviousness, maintenance of recommended wetland and waterbody buffer widths, reduction in the amount of forest cover removal, and utilization of innovative or "green-technology" stormwater methodologies for stormwater management.

The applicant should be made aware that the accurate assessment of a project's true environmental impacts is highly dependent on an accurate accounting and inventory of all its land uses, natural resources and their proposed management. Since it was apparent that some of this information was omitted, incomplete or inaccurate, it is more than likely that aforementioned nutrient budget calculation (via the nutrient budget protocol) actually understates this project's environmental impacts. It is the applicant's responsibility to provide accurate and complete information so that a realistic environmental assessment

can be made. The following are concerns we feel that need to be addressed before a reasonably accurate nutrient budget can be calculated:

1) The reported impervious cover figure (about 24%) appears to understate the likely amount of post-development surface imperviousness generated from this project. This figure should be recalculated in a manner that more realistically accounts for all forms of constructed surface imperviousness (roads, sidewalks, and rooftops).

2) Stormwater design methodologies and number were not clear from the information submitted.

3) It was not clear how the wetland acreage figures reported in the PLUS application were assessed. Wetland acreage figures should be assessed via an analysis of an approved USACOE jurisdictional wetlands delineation, not through a "desk review" of existing NWI or SWMP mapping.

4) Wetland and waterbody buffer widths were not specified.

We then suggest that the applicant verify their project's compliance (after correcting all our concerns and/or using realistic assumptions) with the specified TMDL loading rates by running the model themselves. As mentioned previously, we strongly recommend that the applicant consider the use of the aforementioned BMPs to help ensure compliance with the required TMDLs. Please contact Lyle Jones or John Martin of Watershed Section at 739-9939 for the acceptable model protocol.

Water Supply

The information provided indicates that the Town of Georgetown will provide water to the proposed projects through a central public water system. DNREC and PSC files reflect that Town of Georgetown does not currently hold a certificate of public convenience and necessity (CPCN) to provide public water in these areas. If annexed, the Town will need to notify the Public Service Commission. It the Town intends to serve this property without annexing, they will need to file an application for a CPCN with the Public Service Commission, if they have not done so already. Information on CPCN requirements and applications can be obtained by contacting the Public Service Commission at 302-739-4247.

Should dewatering points be needed during any phase of construction, a dewatering well construction permit must be obtained from the Water Supply Section prior to construction

of the well points. In addition, a water allocation permit will be needed if the pumping rate will exceed 50,000 gallons per day at any time during operation.

All well permit applications must be prepared and signed by licensed water well contractors, and only licensed well drillers may construct the wells. Please factor in the necessary time for processing the well permit applications into the construction schedule. Dewatering well permit applications typically take approximately four weeks to process, which allows the necessary time for technical review and advertising.

Should you have any questions concerning these comments, please contact Rick Rios at 302-739-9944.

Sediment and Erosion Control/Stormwater Management

The Sediment and Stormwater plan review and approval as well as construction inspection will be coordinated through Sussex Conservation District.

Green Technology BMPs must be considered first as a stormwater quality management technique prior to ponds. Green Technology BMPs that employ filtration rather than infiltration would be the most likely choice for this site.

The application states that infiltration and groundwater recharge will be used as stormwater management BMPs but this site is severely limited in the amount of infiltration that will be possible because:

- the site is composed of Fallsington and Pocomoke soils which are noted to have high water tables,
- the presence of a tax ditch on site would indicate poorly drained soil, and
- the site adjoins wetlands.

Some of the planned units adjoin wetlands. Stormwater quality management requirements must be fulfilled for all runoff, including roofs, prior to discharge to the wetlands.

Drainage

This site contains the Layton-Vaughn Tax Ditch, and the plan submitted is proposing to place roads, parking lots, a pump station, sidewalks, and housing units within the Layton Vaughn Tax Ditch right-of-way. Contact the Drainage Program at (302) 856-5488 to determine the tax ditch rights-of-way and the managers of the tax ditch.

Rare Species

DNREC has not surveyed these parcels; therefore, it is unknown if there are state-rare or federally listed plants, animals or natural communities at this project site. However, they do have records of a state-rare amphibian, Psuedotriton montanus (mud salamander), within forested wetlands on an adjacent parcel and this species may be present within the project area.

Forested Wetlands

This site contains a large area of forested wetlands, a type of habitat that supports an array of plant and animal species. DNREC highly recommends that Phase III and Phase IV of this development be eliminated to protect this important forest resource as this type of habitat has been impacted by development statewide. When forested areas are cleared or otherwise converted into a residential area, wildlife species dependent on that habitat must disperse into surrounding areas. This type of forest fragmentation separates wildlife populations, and increases "edge effects" that leave many forest dwelling species vulnerable to predation and allows the infiltration of invasive species. This also can lead to an increase in human/animal conflicts, including interactions on the roadways. This type of forest loss can also put pressure on nearby State protected lands such as wildlife areas, State forests and other public-owned properties.

Nuisance Waterfowl

Stormwater management ponds in the site plan may attract waterfowl like resident Canada geese and mute swans. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Short manicured grass around ponds provide an attractive habitat for these species. DNREC recommends native plantings of tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area around the perimeter. Waterfowl do not feel safe when they can not see the surrounding area for possible predators. These plantings should be completed as soon as possible as it is easier to deter geese when there are only a few than it is to remove them once they become plentiful. The Division of Fish and Wildlife does not provide goose control services, and if problems arise, property managers or owners will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with proper landscaping, monitoring, and other techniques, geese problems can be minimized.

Solid Waste

Each Delaware household generates approximately 3,600 pounds of solid waste per year. On average, each new house constructed generates an additional 10,000 pounds of construction waste. Due to Delaware's present rate of growth and the impact that growth will have on the state's existing landfill capacity, the applicant is requested to be aware of the impact this project will have on the State's limited landfill resources and, to the extent possible, take steps to minimize the amount of construction waste associated with this development.

Underground Storage Tanks

There is one inactive and one active LUST site(s) located near the proposed project:

Howard Ennis School, Facility # 5-000551, Project # S9911235
Friendly Farm Store, Facility # 5-000129, Project # S9206157

No environmental impact is expected from the above inactive/active LUST site(s). However, should any underground storage tank or petroleum contaminated soil be discovered during construction, the Tank Management Branch must be notified as soon as possible. It is not anticipated that any construction specifications would need to be changed due to petroleum contamination. However, should any unanticipated contamination be encountered and PVC pipe is being utilized, it will need to be changed to ductile steel with nitrile rubber gaskets in the contaminated areas.

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 20.5 tons (40,981.7 pounds) per year of VOC (volatile organic compounds), 17.0 tons (33,930.1 pounds) per year of NOx (nitrogen oxides), 12.5 tons (25,034.2 pounds) per year of SO2 (sulfur dioxide), 1.1 ton (2,228.5 pounds) per year of fine particulates and 1,714.0 tons (3,428,068.1 pounds) per year of CO2 (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 8.3 tons (16,529.8 pounds) per year of VOC (volatile organic compounds), 0.9 ton (1,818.8 Pounds) per year of NOx (nitrogen oxides), 0.8 ton (1,509.3 pounds) per year of SO2 (sulfur dioxide), 1.0 ton (1,947.7 pounds) per year of fine particulates and 33.5 tons (67,008.1 pounds) per year of CO2 (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 3.3 tons (6,551.2 pounds) per year of NOx (nitrogen oxides), 11.4 tons (22,786.8

pounds) per year of SO2 (sulfur dioxide) and 1,680.5 tons (3,361,060.1 pounds) per year of CO2 (carbon dioxide).

	VOC	NOx	SO_2	$PM_{2.5}$	CO_2
Mobile	20.5	17.0	12.5	1.1	1714.0
Residential	8.3	0.9	0.8	1.0	33.5
Electrical Power		3.3	11.4		1680.5
TOTAL	28.8	21.2	24.7	2.1	3428.0

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 3.3 tons of nitrogen oxides per year and 11.4 tons of sulfur dioxide per year.

A significant method to mitigate this impact would be to require the builder to construct Energy Star qualified homes. Every percentage of increased energy efficiency translates into a percent reduction in pollution. Quoting from their webpage, http://www.energystar.gov/:

"ENERGY STAR qualified homes are independently verified to be at least 30% more energy efficient than homes built to the 1993 national Model Energy Code or 15% more efficient than state energy code, whichever is more rigorous. These savings are based on heating, cooling, and hot water energy use and are typically achieved through a combination of:

building envelope upgrades,
high performance windows,
controlled air infiltration,
upgraded heating and air conditioning systems,
tight duct systems and
upgraded water-heating equipment."

The Energy office in DNREC is in the process of training builders in making their structures more energy efficient. The Energy Star Program is an excellent way to save on energy costs and reduce air pollution. They highly recommend this project development and other residential proposals increase the energy efficiency of their homes.

They also recommend that the home builders offer geothermal and photo voltaic energy options. Applicable vehicles should use retrofitted diesel engines during construction.

The development should provide tie-ins to the nearest bike paths, links to mass transit, and fund a lawnmower exchange program for their new occupants.

State Fire Marshal's Office – Contact: Duane Fox 856-5298

These comments are intended for informational use only and do not constitute any type of approval from the Delaware State Fire Marshal's Office. At the time of formal submittal, the applicant shall provide; completed application, fee, and three sets of plans depicting the following in accordance with the Delaware State Fire Prevention Regulation (DSFPR):

a. **Fire Protection Water Requirements**:
   - Water distribution system capable of delivering at least 1500 gpm for 2-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Pump Station)
   - Water distribution system capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Assembly and Townhouses)
   - Where a water distribution system is proposed for the site, the infrastructure for fire protection water shall be provided, including the size of water mains for fire hydrants and sprinkler systems.

b. **Fire Protection Features:**
   - All structures over 10,000 Sq. Ft. aggregate will require automatic sprinkler protection installed.
   - Buildings greater than 10,000 sq.ft., 3-stories of more or over 35 feet, or classified as High Hazard, are required to meet fire lane marking requirements.
   - Show Fire Department Connection location (Must be within 300 feet of fire hydrant), and detail as shown in the DSFPR.
   - Show Fire Lanes and Sign Detail as shown in DSFPR
   - For townhouse buildings, provide a section / detail and the UL design number of the 2-hour fire rated separation wall on the Site plan.

c. **Accessibility**
   - All premises, which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from Vaughn Road must be constructed so fire department apparatus may negotiate it.

- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.
- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.
- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

d. **Gas Piping and System Information:**
   - Provide type of fuel proposed, and show locations of bulk containers on plan.

e. **Required Notes**:
   - Provide a note on the final plans submitted for review to read " All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations"
   - Proposed Use
   - Alpha or Numerical Labels for each building/unit for sites with multiple buildings/units
   - Square footage of each structure (Total of all Floors)
   - National Fire Protection Association (NFPA) Construction Type
   - Maximum Height of Buildings (including number of stories)
   - Townhouse 2-hr separation wall details shall be shown on site plans
   - Note indicating if building is to be sprinklered
   - Name of Water Provider
   - Letter from Water Provider approving the system layout
   - Provide Lock Box Note (as detailed in DSFPR) if Building is to be sprinklered
   - Provide Road Names, even for County Roads

Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: www.delawarestatefiremarshal.com, technical services link, plan review, applications or brochures.

Department of Agriculture - Contact: Milton Melendez 698-4500

The Delaware Department of Agriculture has no objections to the Shipbuilders Square application. The *Strategies for State Policies and Spending* encourages environmentally responsible development in Investment Levels 1 & 2. This site is a part of a "good recharge" area. DNREC has mapped all ground water potential recharge areas. A "good recharge" rating is the highest rating and designates an area as having important groundwater recharge qualities. Maintaining pervious cover in "Excellent" and "Good" recharge areas is crucial for the overall environmental health of our state and extremely important to efforts which ensure a safe drinking water supply for future generations. Retention of pervious cover to ensure an adequate future water supply is also important for the future viability of agriculture in the First State. The loss of every acre of land designated as "excellent" and "good" recharge areas adversely impacts the future prospects for agriculture in Delaware.

Right Tree for the Right Place

The Delaware Department of Agriculture Forest Service encourages the developer to use the "Right Tree for the Right Place" for any design considerations. This concept allows for the proper placement of trees to increase property values in upwards of 25% of appraised value and will reduce heating and cooling costs on average by 20 to 35 dollars per month. In addition, a landscape design that encompasses this approach will avoid future maintenance cost to the property owner and ensure a lasting forest resource.

Native Landscapes

The Delaware Department of Agriculture and the Delaware Forest Service encourages the developer to use native trees and shrubs to buffer the property from the adjacent land-use activities near this site. A properly designed forested buffer can create wildlife habitat corridors and improve air quality to the area by removing six to eight tons of carbon dioxide annually and will clean our rivers and creeks of storm-water run-off pollutants. To learn more about acceptable native trees and how to avoid plants considered invasive to our local landscapes, please contact the Delaware Department of Agriculture Plant Industry Section at (302) 698-4500.

Public Service Commission - Contact: Andrea Maucher 739-4247

If this is an expansion to the Georgetown's wastewater service area, it must provide an update to the Commission.

Any expansion of natural gas or installation of a closed propane system must fall within Pipeline Safety guidelines. Contact: Malak Michael at (302) 739-4247.

Delaware State Housing Authority – Contact Jimmy Atkins 739-4263

This proposal is to develop 267 townhomes on 51 acres, located on the west side of and adjacent to the Town of Georgetown. According to the State Strategies Map, the proposal is located in Investment Level 1 and 2 areas. DSHA supports this proposal because residents will have proximity to services, markets, and employment opportunities. The proposal also targets first time homebuyers. For informational purposes, the most recent real estate data collected by DSHA, the median home price in the Sussex County area is $250,000. However, families earning 100% of Sussex County's median income only qualify for mortgages of $182,000. We recommend that some of the units be set-aside at this price level, to ensure that working households have access to affordable housing.

Following receipt of this letter and upon filing of an application with the local jurisdiction, the applicant shall provide to the local jurisdiction and the Office of State Planning Coordination a written response to comments received as a result of the pre-application process, noting whether comments were incorporated into the project design or not and the reason therefore.

Thank you for the opportunity to review this project. If you have any questions, please contact me at 302-739-3090.

Sincerely,

Constance C. Holland, AICP
Director

CC: Town of Georgetown
Sussex County